

Appl. No. 10/003,908
Amdt dated August 13, 2004
Reply to Office Action of May 19, 2004.

REMARKS/ARGUMENTS

This Amendment After Final Action is being filed following telephone interviews between the Examiner and the undersigned on August 11 and 12, 2004. The Applicants appreciate the Examiner's willingness to discuss this application.

In the interviews, the Barnes et al. reference was discussed. The undersigned pointed out that Barnes et al. do not teach removing a fluorine-containing contaminant; instead, Barnes et al. teach using a fluorine-containing gas to remove semiconductor and metal oxides and hydrocarbons. As explained in the application, it is the process described in Barnes et al. that creates fluorine-containing contaminants on the surfaces of the chamber. Further, the undersigned pointed out that Barnes et al. do not teach exothermically producing H₂O.

The Examiner suggested that the claims be amended to specify that the oxygen-containing gas and the hydrogen-containing gas are different and indicated that the claims might be allowable if they recited that these gases are introduced after the fluorine-containing contaminant was produced and if they referred to the exothermic generation of water.

Claims 1 and 24 have been amended in accordance with the Examiner's suggestions, and Claim 4 has been canceled. As amended, Claims 1 and 24 now recite "leaving a fluorine-containing contaminant on said interior surface" and a process for "thereafter removing said fluorine-containing contaminant." In contrast, the process taught by Barnes et al. is directed to removing "metal oxides and chlorides, particularly silicon dioxide, tungsten oxides, silicon chlorides, and tungsten chlorides, as well as hydrocarbons" (col. 3, lines 19-21). The process they describe is a variant of known processes that use a fluorine-based plasma to remove deposition residues, as described at page 1, lines 21-23, and page 10, lines 23-32, of this application. As described at page 1, lines 27-29, these fluorine-based processes themselves leave contaminants and residues on the interior surfaces of the chamber. Applicant's claimed process is directed to removing these fluorine-containing contaminants. Barnes et al. show no awareness of

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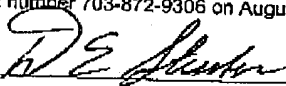
the need to remove these fluorine-containing contaminants from the interior surfaces of the chamber, much less how to do it.

U.S. Patent No. 6,251,776 to Ngo et al. was also referenced by the Examiner in the telephone interviews. Ngo et al. is concerned with the removal of corrosive "etching residues" that form on the side surfaces of metal features following patterning and wet cleaning with a solvent (see e.g., col. 2, lines 12-35). There is no indication that these residues contain fluorine. The only specific example given is hydrochloric acid (col. 2, line 29). Thus Ngo et al. tell us nothing about removing fluorine-containing contaminants from the inside surfaces of a reaction chamber.

Therefore, Applicants respectfully submit that Claims 1-3 and 5-26 are patentable. Reconsideration and withdrawal of the rejection is respectfully requested. Should the Examiner have any questions concerning this response, the Examiner is invited to call the undersigned at (408) 982-8200, ext. 1.

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office to the fax number 703-872-9306 on August 13, 2004.

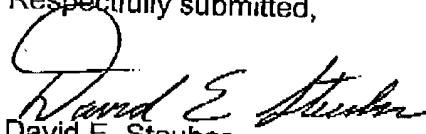


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8/13/04

Date of Signature

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